What is claimed is:

1. An isolated human monoclonal antibody or antigen-binding fragment thereof that binds human interleukin 33 (IL-33), wherein the antibody or antigen-binding fragment thereof inhibits or attenuates IL-33-mediated signaling.

2. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment thereof blocks the interaction of IL-33 and ST2.

3. The isolated antibody or antigen-binding fragment of claim 2, wherein the antibody or antigen-binding fragment thereof blocks the interaction of IL-33 and ST2 with an IC_{50} value of less than about 10 nM, or blocks greater than about 50% of the interaction of IL-33 and ST2 as measured in an *in vitro* receptor/ligand binding assay at 25°C.

4. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment thereof does not block, or only partially blocks the interaction of IL-33 and ST2.

5. The isolated antibody or antigen-binding fragment of any one of claims 1 to 4, wherein the antibody or antigen-binding fragment thereof binds human IL-33 with a binding dissociation equilibrium constant (K_D) of less than about 1 nM as measured in a surface plasmon resonance assay at 37°C.

6. The isolated antibody or antigen-binding fragment of any one of claims 1 to 5, wherein the antibody or antigen-binding fragment thereof binds human IL-33 with a dissociative half-life (t½) of greater than about 8 minutes as measured in a surface plasmon resonance assay at 37°C.

7. The antibody or antigen-binding fragment of any one of claims 1 to 6, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated degranulation of human basophils.

8. The antibody or antigen-binding fragment of claim 7, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated degranulation of human basophils with an IC_{50} of less than about 600 pM as measured in an *in vitro* basophil activation test (BAT).

9. The antibody or antigen-binding fragment of any one of claims 1 to 8, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs.

10. The antibody or antigen-binding fragment of claim 9, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 25 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

11. The antibody or antigen-binding fragment of claim 10, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 3 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

12. The antibody or antigen-binding fragment of claim 11, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 0.5 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

13. The antibody or antigen-binding fragment of any one of claims 1 to 12, wherein the antibody or antigen-binding fragment thereof reduces the frequency of CD4+ T cells, eosinophils and ILC2 cells in the lungs when administered to an animal model of allergen-induced lung inflammation.

14. The antibody or antigen-binding fragment of any one of claims 1 to 13, wherein the antibody or antigen-binding fragment thereof reduces the level of IL-4 and IL-5 in the lungs when administered to an animal model of allergen-induced lung inflammation.

15. The antibody or antigen-binding fragment of claim 14, wherein the antibody or antigen-binding fragment thereof, when administered to an animal model of allergen-induced lung inflammation, results in at least a 4 fold reduction in IL-4 levels and/or at least a 5 fold reduction in IL-5 levels when compared to allergen-challenged animals receiving an isotype control antibody.

16. The antibody or antigen-binding fragment of any one of claims 1 to 15 wherein the antibody or antigen-binding fragment thereof competes for binding to IL-33 with a reference antibody comprising an HCVR/LCVR sequence pair selected from the group consisting of SEQ ID NOs: 2/10, 18/26, 34/42, 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170, 178/186, 194/202, 210/218, 226/234, 242/250, 258/266, 274/282, 290/298, and 308/316.

17. The antibody or antigen-binding fragment of any one of claims 1 to 16, wherein the antibody or antigen-binding fragment thereof binds to the same epitope on IL-33 as a reference antibody comprising an HCVR/LCVR sequence pair selected from the group consisting of SEQ ID NOs: 2/10, 18/26, 34/42, 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170,

178/186, 194/202, 210/218, 226/234, 242/250, 258/266, 274/282, 290/298, and 308/316.

18. An isolated human monoclonal antibody or antigen-binding fragment thereof that specifically binds human interleukin-33 (IL-33), wherein the antibody or antigen-binding fragment comprises: (a) the complementarity determining regions (CDRs) of a heavy chain variable region (HCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 2, 18, 34, 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, 258, 274, 290, and 308; and (b) the CDRs of a light chain variable region (LCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 10, 26, 42, 58, 74, 90, 106, 122, 138, 154, 170, 186, 202, 218, 234, 250, 266, 282, 298, and 316.

19. The isolated antibody or antigen-binding fragment of claim 18, wherein the antibody or antigen-binding fragment comprises the heavy and light chain CDRs of a HCVR/LCVR amino acid sequence pair selected from the group consisting of: SEQ ID NOs: 2/10, 18/26, 34/42, 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170, 178/186, 194/202, 210/218, 226/234, 242/250, 258/266, 274/282, 290/298, and 308/316.

20. The isolated antibody or antigen-binding fragment of claim 18, wherein the antibody or antigen-binding fragment comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, selected from the group consisting of: SEQ ID NOs: 4-6-8-12-14-16; 20-22-24-28-30-32; 36-38-40-44-46-48; 52-54-56-60-62-64; 68-70-72-76-78-80; 84-86-88-92-94-96; 100-102-104-108-110-112; 116-118-120-124-126-128; 132-134-136-140-142-144; 148-150-152-156-158-160; 164-166-168-172-174-176; 180-182-184-188-190-192; 196-198-200-204-206-208; 212-214-216-220-222-224; 228-230-232-236-238-240; 244-246-248-252-254-256; 260-262-264-268-270-272; 276-278-280-284-286-288; 292-294-296-300-302-304; and 310-312-314-318-320-322.

21. An isolated human monoclonal antibody or antigen-binding fragment thereof that specifically binds human interleukin-33 (IL-33), wherein the antibody or antigen-binding fragment comprises: (a) a heavy chain variable region (HCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 2, 18, 34, 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, 258, 274, 290, and 308; and (b) a light chain variable region (LCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 10, 26, 42, 58, 74, 90, 106, 122, 138, 154, 170, 186, 202, 218, 234, 250, 266, 282, 298, and 316.

22. The isolated antibody or antigen-binding fragment of claim 21, wherein the antibody or antigen-binding fragment comprises a HCVR/LCVR amino acid sequence pair selected from the group consisting of: SEQ ID NOs: 2/10, 18/26, 34/42, 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170, 178/186, 194/202, 210/218, 226/234, 242/250,

258/266, 274/282, 290/298, and 308/316.

23. An isolated nucleic acid molecule encoding an antibody or antigen-binding fragment of any of claims 1 through 22.

24. An expression vector comprising the nucleic acid molecule of claim 23.

25. A host cell comprising the expression vector of claim 24.

26. A pharmaceutical composition comprising the antibody or antigen-binding fragment of any one of claims 1 to 22, and a pharmaceutically acceptable carrier or diluent.

27. A method for treating an inflammatory disease or disorder, or at least one symptom associated with the inflammatory disease or disorder, the method comprising administering an antibody that binds specifically to IL-33, or an antigen-binding fragment thereof, according to any of claims 1 through 22, or the pharmaceutical composition of claim 26, to a patient in need thereof, wherein the inflammatory disease or disorder is alleviated, or reduced in severity, duration or frequency of occurrence, or at least one symptom associated with the inflammatory disease or disorder is alleviated, or reduced in severity, duration, or frequency of occurrence.

28. The method of claim 27, wherein the inflammatory disease or disorder is selected from the group consisting of asthma, atopic dermatitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease, multiple sclerosis, arthritis, allergic rhinitis, eosinophilic esophagitis and psoriasis.

29. The method of claim 28, wherein the inflammatory disease or disorder is asthma.

30. The method of claim 29, wherein the asthma is eosinophilic or non-eosinophilic asthma.

31. The method of any of claims 28-30, wherein the asthma is steroid resistant or steroid sensitive asthma.

32. The method of claim 28, wherein the inflammatory disease or disorder is atopic dermatitis.

33. The method of claim 28, wherein the inflammatory disease or disorder is chronic obstructive pulmonary disease (COPD).

34. The method of claim 33, wherein the chronic obstructive pulmonary disease results from, or is caused in part by cigarette smoke.

35. A method for treating a patient who demonstrates a sensitivity to an allergen, the method comprising administering an effective amount of an antibody or antigen binding fragment thereof that binds specifically to IL-33, according to any of claims 1-22, or the pharmaceutical composition of claim 26, to a patient in need thereof, wherein the patient demonstrates a reduced sensitivity to, or a diminished allergic reaction against the allergen, or does not experience any sensitivity or allergic reaction to, or anaphylactic response to the allergen following administration of the antibody or a composition comprising the antibody.

36. An antibody according to any of claims 1-22, or the pharmaceutical composition of claim 26 for use in treating an inflammatory disease or disorder, wherein the inflammatory disease or disorder is selected from the group consisting of asthma, allergy, anaphylaxis, atopic dermatitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease, multiple sclerosis, arthritis, allergic rhinitis, eosinophilic esophagitis and psoriasis.

37. An antibody according to any of claims 1-22, or the pharmaceutical composition of claim 26 in the manufacture of a medicament for the treatment of an inflammatory disease or disorder, wherein the inflammatory disease or disorder is selected from the group consisting of asthma, allergy, anaphylaxis, atopic dermatitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease, multiple sclerosis, arthritis, allergic rhinitis, eosinophilic esophagitis and psoriasis.

38. The method of any of claims 27-37, further comprising administering an effective amount of a second therapeutic agent useful for alleviating the inflammatory disease or disorder, or at least one symptom of the inflammatory disease or disorder, or for diminishing an allergic response to an allergen.

39. The method of claim 38, wherein the second therapeutic agent is selected from the group consisting of a non-steroidal anti-inflammatory (NSAID), a corticosteroid, a bronchial dilator, an antihistamine, epinephrine, a decongestant, a thymic stromal lymphopoietin (TSLP) antagonist, an IL-13 antagonist, an IL-4 antagonist, an IL-4/IL-13 dual antagonist, an IL-5 antagonist, an IL-6 antagonist, an IL-12/23 antagonist, an IL-22 antagonist, an IL-25 antagonist, an IL-17 antagonist, an IL-31 antagonist, an oral PDE4 inhibitor and another IL-33 antagonist or a different antibody to IL-33.

What is claimed is:

1. An isolated human monoclonal antibody or antigen-binding fragment thereof that binds both human and cynomolgus monkey interleukin 33 (IL-33), wherein the antibody or antigen-binding fragment thereof inhibits or attenuates human and cynomolgus monkey IL-33-mediated signaling.

2. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment thereof blocks the interaction of IL-33 and ST2.

3. The isolated antibody or antigen-binding fragment of claim 2, wherein the antibody or antigen-binding fragment thereof blocks the interaction of IL-33 and ST2 with an IC_{50} value of less than about 10 nM, or blocks greater than about 50% of the interaction of IL-33 and ST2 as measured in an *in vitro* receptor/ligand binding assay at 25ºC.

4. The isolated antibody or antigen-binding fragment of any one of claims 1 to 3, wherein the antibody or antigen-binding fragment thereof binds human IL-33 with a binding dissociation equilibrium constant (K_D) of less than about 1 nM as measured in a surface plasmon resonance assay at 37ºC.

5. The isolated antibody or antigen-binding fragment of any one of claims 1 to 4, wherein the antibody or antigen-binding fragment thereof binds human IL-33 with a dissociative half-life (t½) of greater than about 8 minutes as measured in a surface plasmon resonance assay at 37ºC.

6. The antibody or antigen-binding fragment of any one of claims 1 to 5, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated degranulation of human basophils.

7. The antibody or antigen-binding fragment of claim 6, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated degranulation of human basophils with an IC_{50} of less than about 600 pM as measured in an *in vitro* basophil activation test (BAT).

8. The antibody or antigen-binding fragment of any one of claims 1 to 7, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs.

9. The antibody or antigen-binding fragment of claim 8, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 25 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

10. The antibody or antigen-binding fragment of claim 9, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 3 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

11. The antibody or antigen-binding fragment of claim 10, wherein the antibody or antigen-binding fragment thereof inhibits IL-33-mediated IFN-gamma production from human PBMCs with an IC_{50} of less than about 0.5 nM as measured in an *in vitro* PBMC IFN-gamma production assay.

12. The isolated human monoclonal antibody or antigen-binding fragment thereof of claim 1, wherein the antibody or antigen-binding fragment comprises: (a) the complementarity determining regions (CDRs) of a heavy chain variable region (HCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, 258, 274, 290, and 308; and (b) the CDRs of a light chain variable region (LCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 58, 74, 90, 106, 122, 138, 154, 170, 186, 202, 218, 234, 250, 266, 282, and 298.

13. The isolated antibody or antigen-binding fragment of claim 12, wherein the antibody or antigen-binding fragment comprises the heavy and light chain CDRs of a HCVR/LCVR amino acid sequence pair selected from the group consisting of: SEQ ID NOs: 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170, 178/186, 194/202, 210/218, 226/234, 242/250, 258/266, 274/282, and 290/298.

14. The isolated antibody or antigen-binding fragment of claim 12, wherein the antibody or antigen-binding fragment comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, selected from the group consisting of: SEQ ID NOs: 52-54-56-60-62-64; 68-70-72-76-78-80; 84-86-88-92-94-96; 100-102-104-108-110-112; 116-118-120-124-126-128; 132-134-136-140-142-144; 148-150-152-156-158-160; 164-166-168-172-174-176; 180-182-184-188-190-192; 196-198-200-204-206-208; 212-214-216-220-222-224; 228-230-232-236-238-240; 244-246-248-252-254-256; 260-262-264-268-270-272; 276-278-280-284-286-288; and 292-294-296-300-302-304.

15. The isolated human monoclonal antibody or antigen-binding fragment thereof of claim 1, wherein the antibody or antigen-binding fragment comprises: (a) a heavy chain variable region (HCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, 258, 274, and 290; and (b) a light chain variable region (LCVR) having an amino acid sequence selected from the group consisting of SEQ ID NOs: 58, 74, 90, 106, 122, 138, 154, 170, 186, 202, 218, 234, 250, 266, 282, and 298.

16. The isolated antibody or antigen-binding fragment of claim 15, wherein the antibody or antigen-binding fragment comprises a HCVR/LCVR amino acid sequence pair selected from the group consisting of: SEQ ID NOs: 50/58, 66/74, 82/90, 98/106, 114/122, 130/138, 146/154, 162/170, 178/186, 194/202, 210/218, 226/234, 242/250, 258/266, 274/282, and 290/298.

17. The antibody or antigen-binding fragment of claim 1, comprising the heavy and light chain CDRs of the HCVR/LCVR amino acid sequence pair of SEQ ID NOs: 274/282.

18. The antibody or antigen-binding fragment of claim 17, comprising HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, of SEQ ID NOs: 276-278-280-284-286-288.

19. The antibody or antigen-binding fragment of claim 18, comprising the HCVR/LCVR amino acid sequence pair of SEQ ID NOs: 274/282.

20. The antibody of any one of claims 1 to 19, wherein the antibody has a human IgG1 or human IgG4 constant region.

21. An isolated nucleic acid molecule encoding an antibody or antigen-binding fragment of any of claims 1 through 20.

22. An expression vector comprising the nucleic acid molecule of claim 21.

23. A host cell comprising the expression vector of claim 22.

24. A pharmaceutical composition comprising the antibody or antigen-binding fragment of any one of claims 1 to 20, and a pharmaceutically acceptable carrier or diluent.

25. Use of an antibody or antigen-binding fragment of any one of claims 1 to 20 in the manufacture of a medicament for treating an inflammatory disease or disorder, or at least one symptom associated with the inflammatory disease or disorder.

26. The use of claim 25, wherein the inflammatory disease or disorder is selected from the group consisting of asthma, atopic dermatitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease, multiple sclerosis, arthritis, allergic rhinitis, eosinophilic esophagitis and psoriasis.

27. The use of claim 26, wherein the inflammatory disease or disorder is asthma.

28. The use of claim 27, wherein the asthma is eosinophilic or non-eosinophilic asthma.

29. The use of any of claims 26-28, wherein the asthma is steroid resistant or steroid sensitive asthma.

30. The use of claim 30, wherein the inflammatory disease or disorder is atopic dermatitis.

31. The use of claim 30, wherein the inflammatory disease or disorder is chronic obstructive pulmonary disease (COPD).

32. The use of claim 31, wherein the chronic obstructive pulmonary disease results from, or is caused in part by cigarette smoke.

33. Use of an antibody or antigen-binding fragment of any one of claims 1 to 20 in the manufacture of a medicament for treating a patient who demonstrates a sensitivity to an allergen

34. The use of any of claims 25-33, wherein the medicament is for use in combination with a second therapeutic agent useful for alleviating the inflammatory disease or disorder, or at least one symptom of the inflammatory disease or disorder, or for diminishing an allergic response to an allergen.

35. The use of claim 34, wherein the second therapeutic agent is selected from the group consisting of a non-steroidal anti-inflammatory (NSAID), a corticosteroid, a bronchial dilator, an antihistamine, epinephrine, a decongestant, a thymic stromal lymphopoietin (TSLP) antagonist, an IL-13 antagonist, an IL-4 antagonist, an IL-4/IL-13 dual antagonist, an IL-5 antagonist, an IL-6 antagonist, an IL-12/23 antagonist, an IL-22 antagonist, an IL-25 antagonist, an IL-17 antagonist, an IL-31 antagonist, an oral PDE4 inhibitor and another IL-33 antagonist or a different antibody to IL-33.